FACT SHEET FOR STATE WASTE DISCHARGE PERMIT NO. ST-9234

HOLDEN VILLAGE, INC.

SUMMARY

Holden Village, Inc. is a religious retreat center founded in 1961, which provides accommodations for about 7,000 people during the course of the year. The location is remote and accessible only by foot, float plane, boat and bus. The boat dock is eleven miles and 2100 feet below the Village. A bus provides transport to the Village from the boat dock. The Village is located on what was once the site of the largest underground copper mine in the contiguous United States. The village population in the summer increases to a maximum of 450 people at any one time that includes registered guests and staff. In the winter months weekend visitors may bring the population of the village up to a maximum of 130, which includes a steady winter staff population of around 75.

Holden Village has installed a modern State approved wastewater collection, treatment and land disposal system. The Village meets the permit exception criteria for wastewater land disposal, private ownership of wastewater system, and is “grandfathered” due to continuous operation since the 1930’s.

The copper mine began full scale operations in the thirties and ended operations in the late fifties. Holden Mine, owned by Intalco Co., is required to mitigate environmental damage caused by three tailings piles left over from the mining activity. The mitigation project abuts the Holden Village drainfield and, due to its close proximity, complicates the planning of any drainfield monitoring activities until the mitigation project is stabilized. Therefore, the Permittee will be required to follow a Schedule of Compliance that contains annual updates on the progress of the mine mitigation project. Once the construction phase of the project is complete the Permittee will be required to submit for approval a Sampling and Analysis Plan to monitor groundwater for negative impacts from the drainfield.

The monitoring requirements and the limitations of the proposed permit will be determined through approved monitoring plans and limitations contained in the Septic System Operation and Maintenance Manual Appendices A and B.

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No.ST-9234. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the State is allowed. Regulations adopted by the State include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Spokane Office of the Washington State Department of Health and by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix C--Response to Comments.

GENERAL INFORMATION	
Applicant	Holden Village, Inc.
Facility Name and Address	Holden Village HC00 Stop 2 Chelan, WA 98816-9769
Type of Treatment System:	Septic Drainfield
Discharge Location (Septic Tank)	Latitude: 48° 11' 58" N Longitude: 120° 46' 23" W
Contact at Facility	Name: Kristofer Gilje Alternate: Bob Wubbena Telephone #:509.687.3644 360.352.5090
Responsible Official	Name: Kristofer Gilje Title: Village Operations Manager Address:HC00 Stop 2 Chelan, WA 98816-9769 Telephone #:509.687.3644 FAX # 509.687.3375 (Primary means of contact)

BACKGROUND INFORMATION

DESCRIPTION OF THE COLLECTION AND TREATMENT SYSTEM

History

Holden Village, Inc. is a religious retreat center founded in 1961, which provides accommodations for about 7,000 people during the course of the year. The location is remote and accessible only by foot, float plane, boat and bus. The boat dock is eleven miles and 2100 feet below the Village. A bus provides transportation to the Village. The village population in the summer increases to maximum of 450 people at any one time that includes registered guests and staff. In the winter months weekend visitors may bring the population of the village up to a maximum of 130, which includes a steady winter staff population of around 75.

Holden Village is located on what was once the site of the largest underground copper mine in the contiguous United States. The mine began full scale operations in the thirties and ended operations in the late fifties. Holden Mine, owned by Intalco Co, is required to mitigate environmental damage caused by the mining activity. The mitigation project abuts the Holden Village new drainfield, which due to its close proximity, complicates the planning of any

drainfield monitoring activities until the mitigation project is stabilized. The pre-existing drainfield west of the Village failed in 1998.

Permitting Issues

WAC 173-240-035(1) restricts the use of subsurface disposal systems for a system with flow levels similar to the Village. An exception is allowed if no other reasonable alternative exists. An exception was granted due to the remote location of the Village precluding any reasonable alternative.

WAC 173-240-035(2) allows non-public ownership and operation if the operation is in the public interest and there is an enforceable contract to ensure continuous operation of the approved wastewater treatment facilities. The Village system has been an on-going operation by a private party under a general USFS permit since the 1930's. Therefore, it is considered to be in the public interest to continue this practice.

The Village coordinated its wastewater treatment system operation with both the USFS and the Chelan-Douglas Health District. The Village has an agreement with the engineering firm that designed the system to provide operational oversight. The current facilities were approved by the State in 1961 and again on several occasions when the facilities were upgraded, including 1985 and 1987. Since the facilities are not being expanded, the "grandfather" provision of WAC 173-240-104(3) allows the Village to continue as a non-public operating agency.

Collection System Status

Holden Village Inc. has made extensive improvements to the collection system to address serious inflow and infiltration (I&I) problems which previously plagued the older failing system. The Department received a letter from Economic and Engineering Services, Inc. on July 8, 2002 which states the improvements to the collection system have reduced I&I from a previous flow of approximately 23,000 gpd to at or below 14,000 gpd. This was attributed to various activities completed by the village over the course of a number of years. At present no more work is planned on the collection system.

The improvements include:

- Video-inspection of the collection system.
- Pretreatment tanks at the laundry and kitchen areas.
- Replaced substantially all the collection system and lateral piping.
- Replaced old high-flow toilets with low flow ones.
- Eliminated water cooled refrigeration compressors.
- Replaced the failing concrete-block septic tank with two fiberglass tanks.
- Incorporated a detention and flow-metering system in the new septic tanks to attenuate diurnal peak flows.

- Replaced the pump station.
- Added new telemetry system to provide alarms and operating data.
- Identified and removed discrete sources of I&I at manholes, drain connections, etc.
- Completed replacement of over one-half of the old high-flow toilet fixtures.
- Adjusted dosing rates at the Old Miner's Village drainfield site, eliminating the surfacing problems which served to initiate the above listed work. This site is now retained as back-up for the new drainfield.

Treatment Processes

Holden Village has installed a modern Department approved wastewater collection, treatment and land disposal system. The system includes a waste flow and pollutant minimization program that strictly limits the chemicals, solids and volume of flow to a minimum level before treatment.

Treatment is via a multi-tank process that pre-treats and removes surges of wastes from the cafeteria and laundry flowing to the three compartment septic tank. Disposal is then metered out of the tank by controlled pumping to a new pressurized drainfield south of the Village. The existing Village drainfield, north of the Village, has been retained as a back-up or emergency drainfield.

Drainfield

In 1998 and perhaps before, Holden Village experienced failure of its drainfield. By October of 1998 Dave Ray and Associates contracted by Holden Village to investigate the cause of the failure, evaluated operational adjustments contributing to the problem. Then with Economic and Engineering Services they outlined a short-term fix (summer of 1999) and a long-term plan to meet Holden Village's future needs within State regulatory requirements. Short term repairs were completed in the summer of 1999 and were successful in preventing "surfacing" of the wastewater effluent. This drainfield has been designated as an emergency backup drainfield for the newly constructed one.

The new 4.6 acre pressurized drainfield site is located approximately 0.9 miles east of the Village. Wastewater is pumped through a 3 inch forcemain installed along the Rail Creek Road corridor ditch south of the road. The drainfield has a perimeter length of approximately 1,000 feet and a width of about 200 feet above Rail Creek Road. Lateral trenches 5 feet wide and 3 feet deep were excavated for placement of the EZ-Drain engineering components with each trench line following an elevation contour. Each component contains a 1 ¼ inch pressurized PVC pipe within a 4 inch perforated pipe encased in a high permeability geotextile. Each trench line has a 10 foot wide vegetative clearing along each trunk alignment. The drainfield contains four trunk lines with a dosing siphon, manifold, and lateral headers.

Nitrate Reduction

The Permittee has a designed in-place denitrification system based on a paper published in the January-February issue of Ground Water, vol. 33, #1. The paper by Canadians W.D. Robertson and J.A. Cherry titled "In Situ Denitrification of Septic-System Nitrate Using Reactive Porous Media Barriers: Field Trial" evaluates the use of a reactive porous media (sawdust) for the attenuation of nitrates in the infiltration bed of the drain field. Several alternative septic-system designs for nitrate attenuation had been evaluated in the past. Some have been available and used in Canada for almost ten years. They include the use of peat moss, mixing of the septic wastewater with grey water, and adding methanol as a carbon source to aid in denitrification. The authors of this paper, however, demonstrated their system will provide almost complete removal of nitrate from the drainfield infiltration plume, whereas other methods are less effective. In addition, they provided analysis which indicates the lifespan of the system is equal to the lifespan of a conventional drainfield. The authors also reference a potentially detrimental side effect of the system, mobilization of iron and dissolved organic carbon.

The design employs alternating layers of porous sand and silt mixed with a carbon source bed, which in this design is sawdust. The porous sand layers due to hydrostatic pressure create layers where anaerobic conditions are conducive to denitrifying bacterial growth. The sawdust layer provides a source of available organic carbon to act as an electron donor for heterotrophic denitrification in the absence of atmospheric oxygen.

PERMIT STATUS

The facility is currently under a temporary permit. An application for a permit was received by the Department on August 14, 2002 and accepted by the Department on August 23, 2002.

A temporary permit was issued October 23, 2002, due to administrative backlog.

WASTEWATER CHARACTERIZATION

The Permittee, prior to obtaining a permit and also while operating under the temporary permit conducted monitoring of the effluent and influent from November 2001 to February 2005. The following tables contain data derived from that monitoring effort. Data were collected in the high population period during the summer months and the low population period in the winter months. The Village experiences both weekly and seasonal swings in population. The population count of the Village can often double or even triple over the course of a few days, then return to some base level dependant upon the season. The effect this has on the treatment capability of the septic tank at this time is unknown.

The reliability of the septic tank influent and effluent data collected by the Permittee is in question based on the following. TSS removal is around 50% but with BOD there is apparently no removal at all. It is in the Best Professional Judgment of the permit writer that either

individually or a combination of the monitoring technique, the location and timing of the sampling and/or sample handling is producing erroneous data sets. To that end, Special Condition 2A. requires the Permittee to follow a monitoring schedule contained in the most recent approved Septic System Monitoring Plan, which is required to be developed by the Permittee to fulfill Special Condition 5.E.

Influent

Loadings to the Septic system in the following tables are as reported by the Permittee, following independent monitoring of the system. Influent monitoring results in Table 1 are from four sampling events taken in 2003 and one from 2004.

Table 1: Influent Characterization

Parameter	2-year Characterization		
	Cumulative Average	Highest Monthly Value	Lowest Monthly Value
Flow	11,086	16,392 [1]	6006 [3]
BOD_5, in lbs/day	31	60.4 [1]	6.0 [3]
BOD_5, in mg/L	296	442 [1]	120 [3]
TSS, lbs/Day	17.4	27 [1]	6.6
TSS, mg/L	165.7	198 [1]	132
Population	292	415 [2]	77
pH	NA	8.7	6.5
FOG mg/L Hex. Extract	35	43.7	25.5

[1] Highest Values reported for 7/29/04.
[2] Highest Values reported for 6/26/03.
[3] Lowest values reported

Effluent

The concentration of pollutants in the discharge was reported in the NPDES application and in DMRs. The effluent is characterized as follows in Table 2:

Table 2: Effluent Characterization

Parameter	4 Year Characterization		
	Cumulative Average	Highest Monthly Value	Lowest Monthly Value
Flow gpd	9,037	16,392 [1]	3,600 [2]
BOD_5, in lbs/Day	24.6	47.2 [3]	7.8
BOD_5, in mg/L	306	420 [3]	155
TSS, in lbs/Day	6.1	12.6	1.7
TSS, in mg/L	86.2	126	53.3
Population	226	415 [3]	77
pH	NA	7.1	6.4
FOG mg/L Hex. Extract	43.9	50	36.8

[1] Highest value reported 7/29/04.
[2] Lowest value reported 2/16/04.
[3] Highest values occurred in June of 02 and 03.

FACILITY LOADING

The design criteria for this treatment facility are taken from amended 2000 facility plan prepared by Economic and Engineering Services and are as follows in Table 3:

Table 3: Design Criteria for the Holden Village Drainfield

Parameter	Design Criteria
Monthly average flow (max. month):	20,700 gpd
Instantaneous peak hour flow:	40 gpm
BOD influent loading lbs/Day (max. month):	65.6 lbs/Day
BOD influent loading concentration:	380 mg/L
TSS influent loading lbs/Day (max. month):	43.2 lbs/Day
TSS influent loading concentration:	250 mg/L

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an

engineering report when the plant reaches 85% of its flow or loading capacity. For significant new discharges, the permit requires a new application and an engineering report (WAC 173-216-110[5]).

SEPA COMPLIANCE

On July 23, 2002 the US Forest Service issued a Decision Memo approving the Holden Village drainfield replacement under its Special Use Permit. Under guidance from the Forest Service handbook 1909.15-92-1, 31.2(3), this action was categorically excluded from documentation in an environmental impact assessment or environmental assessment.

This project also qualifies for a categorical exemption under SEPA Rules in WAC 197-11-855(1). This categorical exemption would not apply if the project was located in an environmentally sensitive area as defined in WAC 197-11-908. In an August 23, 2002 telephone call made by the Department to Christina Katz with Chelan County planning office it was confirmed that the county has not designated any of the areas in the vicinity of Holden Village to be environmentally sensitive. The entire Village area however, is bordered on three sides by wilderness areas.

Based on the above information, a SEPA determination is not required.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable methods of prevention, control and treatment (AKART) and not pollute the waters of the State. The minimum requirements to demonstrate compliance with the AKART standard are derived from the *Water Reclamation and Reuse Standards*, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The permit also includes limitations on the quantity and quality of the wastewater applied to the drainfield that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the State (WAC 173-216-110).

Technology based limitations developed for Large (up to 14,5000 gpd design criteria) on Site Septic Systems (LOSS) by the Washington State Department of Health require septic systems with BOD strength greater than 230 mg/L to reduce the loading rate so that the BOD loading per unit area per unit time remains constant.

The Department of Ecology in accordance with WAC 173-221-050 may grant limitations at the request of the Permittee that demonstrate that the effluent will:

- Not cause water quality violations; and
- The Permittee identifies effluent concentrations consistently achievable through proper operation and maintenance; and
- The wastewater facility must be within Department approved hydraulic and organic design capacity; and
- The Permittee must complete an analysis of whether seasonal alternative effluent limits are more appropriate then year round.

Monitoring conducted independently by the Permittee while operating under a temporary permit is contradictory. The wide swings in population over the course of a few days makes collecting representative samples of influent and effluent difficult. In some instances effluent BOD levels were higher than influent. Sampling methodology needs to be reviewed. Therefore, the Permittee will be required to develop a Septic System Monitoring Plan, which will detail the enforceable monitoring requirements of the permit. The Septic System Monitoring Plan will constitute Appendix A of the approved Septic System Operation and Maintenance Manual required in SC. 5D.

It is expected that the Permittee will have collected sufficient BOD, TSS and flow data with which to address an analysis of the appropriateness of seasonal limits and the consistently achievable effluent concentrations with proper O&M by the end of the proposed permit term. The Department will establish the appropriate limitations at the beginning of the 2010 permit term.

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the

beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following Table 4:

Table 4: Ground Water Quality Criteria

Parameter	**Criterion**
Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Manganese	0.05 mg/L
Total Iron	0.3 mg/L
Toxics	No toxics in toxic amounts

The Department has reviewed existing records and is unable to determine from the limited sampling data if background ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC; therefore, the Department will use the criteria expressed in the regulation in the proposed permit.

Background groundwater characterization was obtained from one well, HV-3, which is located up-gradient of both the pre-existing and new drainfield at the northwest perimeter of Holden Village. The characterization is contained in Table 5 on the next page:

Table 5: Background Groundwater Characterization

Parameter	Concentration
TSS mg/L	880
TDS mg/L	47
Conductivity (units??)	85
Total Hardness mg/L	43
pH std. units	6.08
Dissolved Oxygen mg/L	11.56
Calcium µg/L	13,900
Magnesium µg/L	1,980
Potassium µg/L	1,050
Sodium µg/L	1,460
Barium µg/L	1.7
Cadmium µg/L	< 0.04
Chromium µg/L	> 0.05
Copper µg/L	3.2
Iron µg/L	< 50
Lead µg/L	2.6
Manganese µg/L	0.7
Silver µg/L	< 0.1
Zinc µg/L	< 6

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

INFLUENT AND EFFLUENT MONITORING

The monitoring and testing schedule is detailed in the proposed permit in S5.E, The Septic System O&M Manual Appendix A: Septic System Monitoring Plan. The Permittee will be required to develop a septic system monitoring plan (SSMP) and submit it to the Department for

approval no later than **October 30, 2005**. The approved SSMP will constitute the enforceable S2.A. monitoring requirements of the proposed permit.

Monitoring parameters will be determined at the time the plan is approved.

GROUND WATER MONITORING

The monitoring of ground water at the site is required in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. The Department has determined that this discharge has a potential to pollute the ground water. Therefore the Permittee is required to evaluate the impacts on ground water quality. Monitoring of the ground water at the site boundaries and within the site is an integral component of such an evaluation.

The Holden Village complex, including the drainfield, is in close proximity to the Holden Mine Mitigation project. The Holden mine site, once the largest underground copper mine in the United States, contains the original miner's village, the mine, the mill structure, waste rock piles and tailing left from approximately twenty years of mining. Holden Village is located on the original town site.

Impacts to Railroad Creek water quality, surrounding habitat, the groundwater quality, and potential damage from unstable tailing mounds are a few of the problems to be addressed by the mitigation project. The project may require streambed relocation, extensive earth moving and grading to take place before the mitigation process can begin and metal contaminated water can be treated.

Until construction activities have ceased and the mitigation project area is at its stable state, the placement of any monitoring wells by the Village to monitor for drainfield impact is impractical. Any wells placed down gradient of the Holden Village drainfield could be buried or otherwise destroyed by earth moving associated with the mitigation project. In addition mitigation project monitoring wells could be shared by the Holden Village for its monitoring requirements. Therefore, in light of the current state of flux at the site, the Permittee will be required to comply with a Schedule of Compliance that will contain annual updates on the progress of the mitigation project and notification of construction completion or that a final decision on an alternative location not likely to impact Permittee monitoring has been reached. Furthermore, once the mitigation project is at its stable state, either by an alternative site decision or construction completion, the Permittee will be required to submit a Sampling and Analysis Plan (SAP) for approval. The approved plan will be required to be placed in Appendix B of the Septic System Operations and Maintenance Manual. The approved plan shall constitute the enforceable limitations of S2.B.in the permit. Monitoring is required to begin no later than one full construction season following SAP approval.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The provisions of Special Condition S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-216-110).

OPERATIONS AND MAINTENANCE

The proposed permit contains Special Condition S5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water pollution the Permittee is required in permit Special Condition S6. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503 and by Ecology under Chapter 70.95J RCW and Chapter 173-208 WAC. The disposal of other solid waste is under the jurisdiction of the local health district.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. Sludge is hauled off site by a state licensed septic hauler.

GENERAL CONDITIONS

General Conditions are based directly on State laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1. requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2. requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3. specifies conditions for modifying, suspending or terminating the permit. Condition G4. requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5. requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges)

into the sewer system tributary to the permitted facility. Condition G6. requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7. prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Condition G8. requires application for permit renewal sixty (60) days prior to the expiration of the permit. Condition G9. requires the payment of permit fees. Condition G10. describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Faulkner, S.P., Patrick Jr., W.H., Gambrell, R.P., May-June, 1989. Field Techniques for Measuring Wetland Soil Parameters, Soil Science Society of America Journal, Vol. 53, No.3.

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology and Department of Health, 1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23. 73 pp.

Washington State Department of Ecology.

Laws and Regulations(http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information
(http://www.ecy.wa.gov/programs/wq/wastewater/index.html)

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

Washington State University, November, 1981. Laboratory Procedures - Soil Testing Laboratory. 38 pp.

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to issue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on September 6, and September 13, 2002 in the Wenatchee World to inform the public that an application had been submitted and to invite comment on the issuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on August 8, 2005 in the Wenatchee World to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Central Regional Office
15 West Yakima Avenue, Suite 200
Yakima, WA 98902

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30 day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509/457-7105, or by writing to the address listed above.

This permit was written by Richard Marcley.

APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Soil Scientist--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5, 3, or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C--RESPONSE TO COMMENTS

No comments were received by the Department of Ecology.